

Application No. 10/630,478
Amdt. Dated November 23, 2005
Reply to Office Action of August 10, 2005

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

1. (Currently amended) A method of expansion of bone tissue for receiving a dental implant comprising the steps of:

(a) creating a small initial osseotomy site in the maxilla or the mandible to a desired depth using a pilot drill at a predetermined implant location;

(b) providing multiple threaded expanders of substantially same structure with increasing diameters, each of said threaded expanders comprising: a top enabling engagement with a dental ratchet; a cylindrical shaft having an upper and a lower end, having depth markings along a longitudinal axis of said shaft; and a threaded expansion tip connected to said lower end of said cylindrical shaft; said threaded expansion tip of each of said multiple threaded expanders having a same length and a substantially same threaded structure to a threaded structure of said dental implant, yet a narrower outer diameter than an outer diameter of said dental implant;

(b)(c) screwing said threaded expansion tip of a first threaded expander into said osseotomy site, thereby expanding said osseotomy site laterally by pushing bone issue tissue away radially from a longitudinal axis of said osseotomy site;

(e)(d) allowing said threaded expansion tip of said first expander staying in said osseotomy site for a sufficient amount of time to impress an interior wall of said osseotomy site;

(d)(e) retrieving said first expander by screwing said threaded expansion tip of said first expander out in a reverse direction; and

(e)(g) repeating steps (b) to (d) (c) to (e) using a second threaded expander which has an increasing outer diameter and a substantially same threaded structure to

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said dental implant, starting by following a thread pattern created in steps ~~(b) to (d)~~ (c) to (e), to further expand said osseotomy site laterally to a final diameter ~~which is complementary to obtain an expanded osseotomy site that has a complementary geometry to said dental implant, but grooves and threads on an interior wall of said expanded osseotomy site are uniformly narrower than an outer diameters of complementary elements of said dental implant so that said expanded osseotomy site enables said implant to sufficiently bite into and uniformly engage with surrounding bone issues~~ tissues.

2. (Currently amended) The method of Claim 1 further comprising screwing said dental implant into said expanded osseotomy site after step ~~(e)~~ (g), starting by following said thread pattern created by said expanders.

3. (Currently amended) The method of Claim 1, wherein in step ~~(e)~~ (d) said sufficient amount of time is from about 10 seconds to about 2 minutes.

4. (Currently amended) The method of Claim 3, wherein in step ~~(e)~~ (g) said final diameter is from about 0.2 to about 0.5 mm narrower than said outer diameter of said dental implant.

5. (Currently amended) The method of Claim 4 further comprising an additional step of repeating step ~~(e)~~ (g) using a third threaded expander having an increasing outer diameter from said second expander to further expand said osseotomy site.

6-7. Canceled.

8. (Currently amended) The method of Claim 4, wherein said diameter of said small initial osseotomy site has a diameter is in a range from about 1.5 mm to about 2.5 mm obtained using said pilot drill having a matching diameter.

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9. (Original) The method of Claim 8, wherein a first expansion achieved by said first expander expands said osseotomy site from about 0.2 to about 0.5 mm in diameter.

10. (Original) The method of Claim 9, wherein a second expansion, achieved by using said second expander expands said osseotomy site from about 0.6 mm to about 1.2 mm in diameter.

11. (Original) The method of Claim 1, wherein said screwing said expanders into said osseotomy site is performed using a ratchet.

12. (Currently amended) A method of expansion of bone tissue for receiving a dental implant comprising the steps of:

- (a) creating a small initial osseotomy site in the maxilla or the mandible to a desired depth using a pilot drill at a predetermined implant location;
- (b) applying an additional drilling to extend an entrance of said osseotomy site only at a cortical level to a diameter complementary to an outer diameter of said dental implant[[,]];
- (c) screwing a threaded expansion tip of a first threaded expander into said osseotomy site, thereby expanding said osseotomy site laterally by pushing bone tissue away radially from a longitudinal axis of said osseotomy site;
- (d) allowing said threaded expansion tip of said first expander staying in said osseotomy site for a sufficient amount of time to impress an interior wall of said osseotomy site;
- (e) retrieving said threaded expansion tip of said first expander by screwing out in a reverse direction; and
- (f) repeating steps (c) to (e) using a second threaded expander which has an increasing outer diameter and a substantially same threaded structure to a threaded structure of said dental implant, starting by following a thread pattern created

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in steps (b) to (d), to further expand said osseotomy site laterally to a final diameter which is complementary to obtain an expanded osseotomy site that has a complementary geometry to said dental implant, but narrower than an said outer diameter of said dental implant so that said expanded osseotomy site enables said implant to sufficiently bite into and uniformly engage with surrounding bone issues.

13. (Currently amended) The method of Claim 12 further comprising screwing placing said dental implant into said expanded osseotomy site after step (f), starting by inserting said dental implant through said cortical level of said osseotomy site and screwing into rest of said osseotomy site by following said thread pattern created by said expanders.

14. (Original) The method of Claim 12, wherein in step (d) said sufficient amount of time is from about 10 seconds to about 2 minutes.

15. (Original) The method of Claim 14, wherein in step (f) said final diameter is from about 0.2 to about 0.5 mm narrower than said outer diameter of said dental implant.

16. (Original) The method of Claim 15 further comprising an additional step of repeating step (f) using a third threaded expander having an increasing outer diameter from said second expander to further expand said osseotomy site laterally.

17. (Currently amended) The method of Claim 16, wherein ~~a threaded portion~~ said threaded expansion tip of said first, second and third expanders has a same length.

18. Canceled.

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19. (Currently amended) The method of Claim 48 12, wherein each of said expanders has a substantially same threaded structure to said dental implant for preparing a complementary geometry of said osseotomy site for receiving said dental implant.

20. (Currently amended) The method of Claim 20 12, wherein each expansion achieved by one of said expander expands said osseotomy site from about 0.6 mm to about 1.5 mm in diameter.

21. (Currently amended) A kit of bone expanders for expanding bone for receiving a dental implant, comprising a plurality of threaded expanders of substantially same structure with increasing diameters, wherein each of said expanders comprising:

- (a) a top enabling engagement with a dental ratchet,
- (b) a cylindrical shaft having a upper and a lower end, having depth markings along a longitudinal axis of said shaft,
- (c) a transition between said upper end of said cylindrical shaft and said top, and
- (d) a threaded expansion tip connected to said lower end of said cylindrical shaft, said tip having a substantially same threaded structure of to a threaded structure of said dental implant, but a narrower outer diameter than an outer diameter of said dental implant,

wherein said threaded expansion tip of each of said plurality of expanders has a same length.

22. Canceled.

23. (Original) The kit of bone expanders of Claim 22, wherein said threaded expansion tip is tapered.

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24. (Original) The kit of bone expanders of Claim 22, wherein said threaded expansion tip is straight.